

STRUCTURES WITH IMPROVED INTERFACIAL STRENGTH OF SiCOH DIELECTRICS AND METHOD FOR PREPARING THE SAME

ABSTRACT OF THE DISCLOSURE

A semiconductor device structure and method for manufacture includes a substrate having a top first layer; a second thin transition layer located on top of the first layer; and, a third layer located on top of the transition layer, wherein the second thin transition layer provides strong adhesion and cohesive strength between the first and third layers of the structure. Additionally, a semiconductor device structure and method for manufacture includes an insulating structure comprising a multitude of dielectric and conductive layers with respective transition bonding layers disposed to enhance interfacial strength among the different layers. Further, an electronic device structure incorporates layers of insulating and conductive materials as intralevel or interlevel dielectrics in a back-end-of-the-line ("BEOL") wiring structure in which the interfacial strength between different pairs of dielectric films is enhanced by a thin intermediate transition bonding layer.